FlexAray™

patent pending

User Manual

For all model numbers – except wireless.

FlexAray75 is intended for professional use. Read the User Manual in its entirety before operating the product.

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Product specifications and information are subject to change without notice.

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General Information

Safety Warnings

WARNING! Read all instructions and warnings in the enclosed instructional brochure before assembling, mounting, installing or operating this FlexAray™ fixture or accessory. Failure to read, thoroughly understand, and follow all instructions and warnings can result in personal injury, damage to equipment, or voiding of warranty. This FlexAray™ fixture or accessory is potentially hazardous if not properly mounted, properly used with, or properly joined with additional FlexAray™ fixtures or accessories. KEEP INSTRUCTIONS FOR FUTURE USE. DO NOT USE THIS FIXTURE IF NOT PROPERLY MOUNTED!

FlexAray™ is intended for professional use. Read the User Manual in its entirety before operating the product.

RISK OF ELECTRICAL SHOCK

FlexAray™ is a lighting product powered by sufficient electricity to cause harm to the human body. Use care and caution when handling and powering the product to avoid direct contact with electrical sources.

SAFETY GUIDELINES

- ✓ Do not position or mount the product near open flames.
- ✓ Use FlexAray™ in dry and damp locations only. The fixtures are not intended for wet applications.
- ✓ Use only FlexAray™ mounting accessories to suspend the fixtures, and use them as instructed herein.
- ✓ Disconnect power and DMX sources before performing any maintenance on the fixtures.
- ✓ Use an approved safety cable as a supplemental restraint on every fixture. Do not rely solely on the FlexAray™ mounting accessories.

Technical and Warranty Assistance

If you have questions about the FlexAray™ series of fixtures that are not answered in this manual, or require warranty assistance, contact the local supplier of your FlexAray™ equipment or 0energyLIGHTING Technical Support, or visit the FlexAray™ website.

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Maintenance

Before conducting any maintenance operations unplug the fixture and allow it to cool to room temperature. Never spray anything onto a hot fixture. DO NOT spray anything into the fixture except compressed air that is filtered for moisture removal first, and only when the fixture is cool.

At least once per year, clean the room-temperature fixture by wiping down the external faces with an electrically-safe cleaning or lint-free dry cloth. To clear settled dust, blow clean dry air into the fixture from front to back. Then blow the fan housing on the back free of any remaining dust. Operate the fixture in self-test mode (see instructions below) to verify function of each output channel.

Inspect the fixture, accessories, and mounting devices for wear and tear, and replace any parts that appear damaged or excessively worn.

Specifications

Description

FlexAray™ is a stage and studio luminaire with features proprietary to its manufacturer, 0energyLIGHTING, LLC. FlexAray™ products are manufactured by 0energyLIGHTING.

FlexAray™ products include a number of proprietary features including (1) the mechanical design of the fixture providing a unique method of interconnection with additional units, (2) controls that offer multiple DMX resolutions, (3) controls that provide for individual, repeatable customization, (4) FlexPalette™ controls that provide for user recorded color palette(s), and (5) FlexRate™ controls that provide for user-controlled frequency rating.

Characteristics

Physical

The fixtures are hexagonal along the axis in which they point, with slots on each face of the hexagon providing for the use of interlocking devices.

FlexAray™ FA-75 which is 7.5-inches in diameter, and 10.5-inches in length, and weighing less than 10 lbs., not including mounting hardware. Additional models are under development.

Fixtures are made and tested for damp location approvals, consistent with an IP20 rating. The fixtures are formed of rugged metals and plastics, properly cleaned and free of defects, and finished to industry standards for both aesthetic and protective purposes.

The FlexAray™ power supply, cooling system and electronics are integral to each fixture. Each physical unit consists of at least (1) a hexagonal fixture, (2) a 3-foot power lead, and (3) a safety cable intended for use with the unit to prevent falls.

Optional standard accessories include hanging brackets of different configurations with holes for ½-inch thru-hole fasteners, optical diffusers, physical interconnection devices, electrical interconnection devices, and wireless DMX reception.

Electrical

The fixture operates on non-dimmed line voltage with a minimum input range of 100 to 240vAC at 50 to 60hz. The fixture and power accessories utilize Neutrik® PowerCon™ power connectors or approved equals. Each unit includes both an input and an output connector for daisy-chained power connections.

Each unit includes limited internal protection against over-voltage, over-current, heat, and open and shorted circuits. Fixture power supplies include energy-star ratings where possible and applicable, and are NRTL recognized for inclusion in the fixture.

LED Emitters

Based on the model number, FlexAray™ fixtures employ a combination of red, green, blue, amber and white light emitting diodes for broad output options. All LEDs are high-power emitters of proven quality from established, reputable and industry-leading LED manufacturers. LEDs are manufactured to specification of an advanced binning process for color consistency. Employed LEDs have an expected and manufacturer-rated nominal life of at least 50,000 hours. All LED subassemblies are subjected to a 4-hour burn-in test during production.

Controls

The fixture complies with the USITT DMX512 standards of 1990 and forward. Multiple DMX modes are offered including both 8 and 16-bit inputs. 16-bit modes utilize two consecutive addresses per output channel.

Operating Modes

FlexAray™ fixtures incorporate the following DMX modes:

DMX Mode 1 offers an 8-bit input resolution with 10-bit output resolution at any of four user-selectable high frequencies for flicker free operation.

DMX Mode 2 offers an 8-bit input resolution with 10-bit output resolution at any of four user-selectable high frequencies for flicker free operation. The last channel is a master intensity control of all other output channels. This channel includes a user-selectable choice of standard or inverted control.

DMX Mode 3 offers a 16-bit input resolution with 16-bit output resolution at any of four user-selectable high frequencies for flicker free operation.

DMX Mode 4 offers a 16-bit input resolution with 16-bit output resolution at any of four user-selectable high frequencies for flicker free operation. The last two channels are a master intensity control (course and fine) of all other output channels. These channels include a user-selectable choice of standard or inverted control.

Wireless DMX reception is optional and accomplished with the inclusion of an internal LumenRadio™ DMX receiver and externally mounted antenna. All DMX modes and options are available in wireless operation. One LumenRadio™ wireless DMX unit can receive and broadcast a DMX signal to multiple down-steam units connected via XLR.

The fixture offers stand-alone operation with user-programmable features of 100 user-programmable color memory locations and 80 user-selectable combinations of fade and/or bump timing.

The fixture offers a user-selectable feature to create master/slave relationships based on down-stream XLR connections. Master mode distributes any Stand-alone output to downstream fixtures. Incoming XLR and wireless DMX inputs are disabled in this unit when in Master mode. Downstream slave fixtures react to the Stand-alone Master instructions in synchronous operation with the master. Any downstream XLR connected unit set to Master mode begins a new control string of further downstream units.

The fixture offers a user-selectable option to set and terminate the XLR string it ends. No external termination device is required.

The fixture's controls include a self-test mode of two steps. Step 1 quickly tests and transitions through colors and fading, while Step 2 then repeats a simple output pattern for continuous testing or demonstration.

Emitter output is flicker-free and includes a selection of four output frequencies for each of the four DMX modes. PWM control of LED levels is imperceptible to video cameras and similar equipment.

Agency and Environmental Compliance

FlexAray™ fixtures are RoHS compliant and NRTL listed to the UL 1573 and 8750 standard(s).

Electrical

Installation

FlexAray™ fixtures operate on 100 to 240vAC at 50 to 60 Hertz. A risk of electrical shock exists. Each fixture contains one input and one output power connection jack.

Do not operate the FlexAray™ fixture on a dimmed circuit. The fixture requires constant input voltage.

Molded Power Cord (included in the box)

Primary power cord to Edison cord cap for use to feed primary power to one or multiple interconnected units.

36-inch US Power Cord

A 36-inch US Power Cord is included with your fixture. This cord includes a Neutrik powerCON cord cap on one end and an Edison 3-prong cord cap on the other.

✓ To use this cord, simply insert the Neutrik powerCON cord cap into the matching color socket on a fixture and twist the connector clockwise until it locks. Connect the opposite end to primary power.
✓ To disconnect a Neutrik powerCON from its socket, pull the metal locking tab on the cord cap back while turning the cord cap counterclockwise and out of the socket.

You can connect up to 10 fixtures in a daisy-chain. DO NOT exceed 10 fixtures per power cord.

Accessories

The following electrical accessories are available for the FlexAray™ fixture.

✓ 9-inch fixture-to-fixture Power Connector (FA-PWR9)
✓ 36-inch fixture-to-fixture Power Connector (FA-PWR36)
✓ 36-inch Universal Replacement Power Cord (FA-PWR)

Interconnection Cords (FA-PWR9 and FA-PWR36)

These power cords are used to interconnect multiple units.

9 and 36-inch Power Connectors

Power Connectors are interconnecting cables to make power feeds from one fixture to another as a daisy chain. Power Connectors are sold separately and available in both 9 and 36-inch lengths. Each connector includes an installed pair of Neutrik powerCON cord caps that differ by color and locking tab. With this configuration, the color coding allows you to match the powerCON colors on both the fixture and the connector (blue to blue, gray to gray) to make proper power connections.

✓ To use the Power Connectors, simply insert the cord cap on one end into the matching color socket on a fixture and twist the connector clockwise until it locks. Insert the opposite end's cord cap into a matching color socket on another fixture and twist the connector clockwise until it locks. Power and grounding is now supplied through the first fixture to the second, and so on.
✓ To disconnect a Neutrik powerCON from its socket, pull the metal locking tab on the cord cap back while turning the cord cap counterclockwise and then out of the socket.

You can connect up to 10 fixtures in a daisy-chain. DO NOT exceed 10 fixtures per primary power cord.

Universal Power Cord (FA-PWR)

Primary power cord to bare end for use to feed primary power to one or multiple interconnected units, a separately purchased cord cap will need to be bought and installed properly.

36-inch Universal Power Cord

The 36-inch Universal Power Cord is sold separately as a replacement power supply cable when Edison cord caps are not required. The Universal Power Cord includes a Neutrik powerCON cord cap on one end and is bare ended on the other, allowing you to have your choice of primary power cord caps to be installed.

✓ To use the Universal Power Cord once you have had the required cord cap installed, simply insert the Neutrik powerCON cord cap into the matching color socket on a fixture and twist the connector clockwise until it locks. Connect the opposite end to the primary power.

✓ To disconnect a Neutrik powerCON from its socket, pull the metal locking tab on the cord cap back while turning the cord cap counterclockwise and then out of the socket.

You can connect up to 10 fixtures in a daisy-chain. DO NOT exceed 10 fixtures per power cord.

DMX XLR Connections (provided by others)

Each FlexAray™ fixture includes one male and one female 5-pin XLR connector for the DMX signal. Incoming DMX should be connected to the male XLR connector and outgoing to the female. This is critical in wireless and master mode applications where only the female conveys the DMX signal to subsequent fixtures.

Mechanical and Interconnection

The primary goal of the FlexAray™ mechanical design is to offer users a wide variety of options for deployment of the fixtures. These options all surround two basic, proprietary characteristics of the fixture design – the hexagonal shape and the interlock feature. Options for use are further expanded via the various mounting hardware options.

Mechanical Limitations

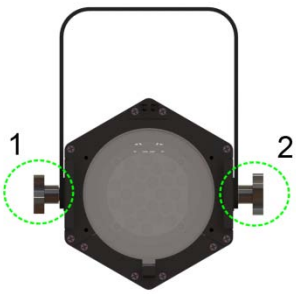
Proper use of the FlexAray™ fixture and accessories are constrained by the following mechanical and electrical limitations, as tested and certified by the NRTL and as labeled on the fixture:

Always install at least one secondary safety cable on each fixture and connect to a secure hanging structure that does not include a hanger or FlexAray™ accessory.

No more than ten (10) FA75 fixtures may be hung from one hanger setup. Each such hanger setup consists of either one yoke (FA75-Y-x-1) AND a set of two hanger blocks (FA-BMSK-x-2) and/or a set of two single hanger brackets (FA-SH-x-2) AND a set of two hanger blocks (FA-BMSK-x-2).

No more than ten (10) FA75 fixtures may be powered by a common power feed (power cord).

Remember, a proper hanger setup has two connection points to the interlocked fixtures.



When interlocking assemblies are used on a surface and not hung, the mechanical possibilities are virtually unlimited. HOWEVER, no more than ten (10) FA75 fixtures may be powered by a common power feed (power cord).

DO NOT use a tool or device other than your hand to tighten the grip-handle nuts of the hanger block assemblies, as this may damage the nut.

WARNING! Read all instructions and warnings in the downloadable instructional brochure before assembling, mounting, installing or operating this FlexAray™ fixture or accessory. Failures to read, thoroughly understand, and follow all instructions and warnings can result in personal injury, damage to equipment, or voiding of warranty.

This FlexAray™ fixture or accessory is potentially hazardous if not properly mounted, properly used with, or properly joined with additional FlexAray™ fixtures or accessories.

KEEP INSTRUCTIONS FOR FUTURE USE.

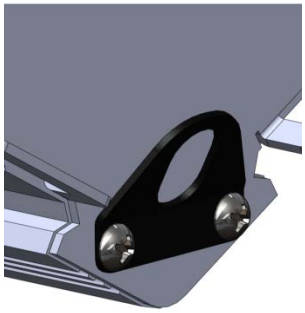
DO NOT USE THIS FIXTURE IF NOT PROPERLY MOUNTED!

Secondary Safety Cable

A 36-inch secondary safety cable; (made by others), is included with each fixture. This cable includes a loop at one end and a carabineer on the other. Attach the cable securely to the fixture and the hanging structure by choking through the enclosed loop and clipping the carabineer to the other, or choking both ends.

Always install at least one secondary safety cable on each fixture and connect to a secure hanging structure that does not include a hanger clamp or FlexAray™ accessory.

The below image is the clip on the unit that the safety cable connects through.



Hardware Accessories

Your FlexAray™ fixture can be used with a variety of FlexAray™ accessories. These accessories include the following list and are sold separately. Instructions for use of each accessory provided below.

- ✓ Hanger Blocks (FA-BMSK-x-2)
- ✓ Yoke (FA75-Y-B-1)
- ✓ Single-arm Hangers (FA-SH-x-2)
- ✓ Extension Hangers (FA-EXT-x-2)
- ✓ Interlock Device (FA75-INT-x-2)

Hanger Blocks (FA-BMSK-x-2)

Each FA-BMSK hanger block kit consists of a set of two hanger pads plus all hardware for their use. Hanger Blocks are sold separately as a set of two and should always be used in pairs.

Generally, installing the hanger block onto the FA75 fixture consists of the following:

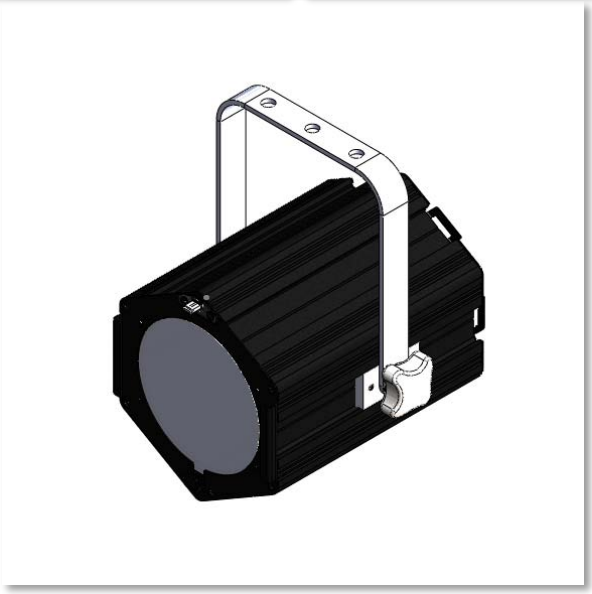
- ✓ Insert an included ½-in bolt through the hole in a hanger pad with the head of the bolt recessed into the cavity on one side of the pad.
- ✓ Place the included internal-tooth washer onto the bolt.
- ✓ Put the bolt through the appropriate mounting hole in an accessory or environment.
- ✓ Install the grip-handle nut onto the bolt and hand-tighten.
- ✓ Slide the assembled hanger block into a slot on one of the six fixture sides. Note the position of the block relative to the front of the unit and possible front accessory usage.
- ✓ Using a 1/8-inch Allen wrench (included), tighten the set screws (2) in the hanger pad against the fixture body so that the pad no longer slides. A force of at least 7 to 10 pounds is all that is needed to secure the pad in place. Test to see that the pad does not slide once secured.
- ✓ Install a Safety Ring on the bent tab at the back end of the slot where the hanger pad is installed.
- ✓ Repeat this process for the opposite side of the fixture or group of fixtures, aligning the second pad directly across from the first.

Yoke (FA-Y-x-1)

The yoke hanger fits from side-to-side on any FA75 FlexAray™ fixture and attaches with a set of hanger blocks. When using a yoke, fully assemble the hanger setup before installing the setup onto the fixture. Otherwise, you will find it nearly impossible to stretch the yoke over the hanger blocks' mounting bolts and may cause damage to the yoke.

To assemble this setup:

✓ Insert an included ½-in bolt through the hole in a hanger pad with the head of the bolt recessed into the cavity on one side of the pad.
✓ Place the included internal-tooth washer onto the bolt.
✓ Put the bolt through the hole in the yoke.
✓ Install the grip-handle nut onto the bolt and hand-tighten.
✓ Repeat this process for the other side of the yoke.
✓ Slide the yoke assembly into opposing slots on the fixture sides. Note the position of the yoke relative to the front of the unit and possible front accessory usage.
✓ Install a Safety Ring on each of the bent tabs at the back end of the slots where the hanger pad is installed.
✓ Using a 1/8-inch Allen wrench (included), tighten the set screws (2) in each hanger pad against the fixture body so that the pad no longer slides. A force of about 7 to 10 pounds is all that is needed to secure the pad in place. Test to see that the pad does not slide once secured.
✓ **THE FINAL STEP IS TO INSERT THE PROVIDED CARABINEER INTO THE INTERLOCK SLOT TO PREVENT THE HANGER PAD FROM ACCIDENTALLY FALLING OUT.**

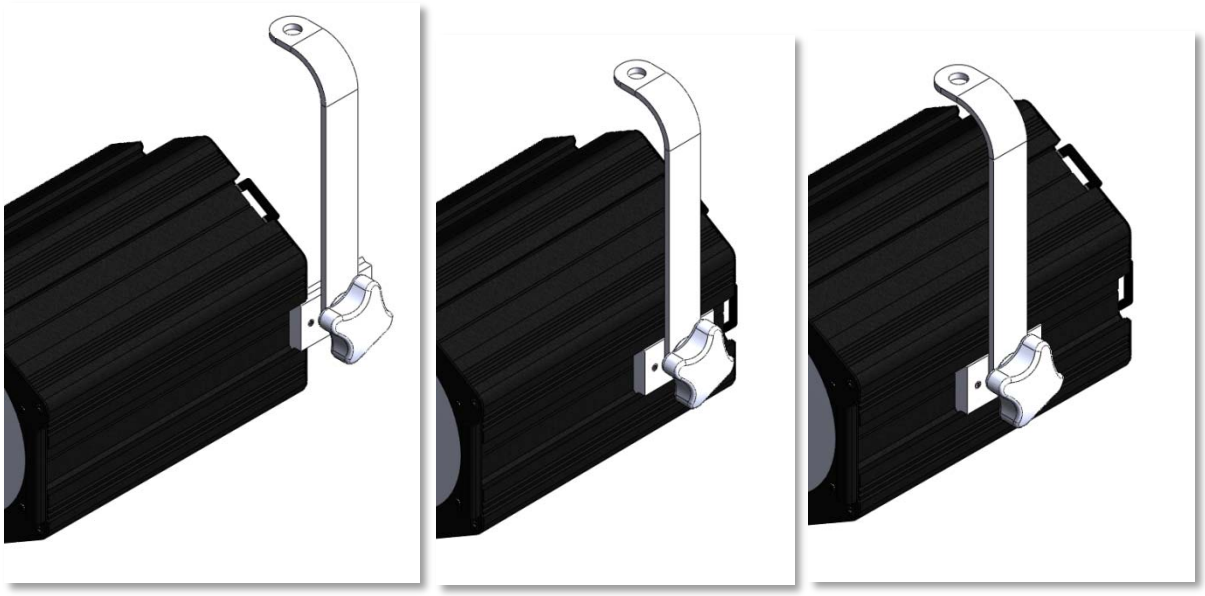


Single-arm Hangers (FA-SH-x-1)

Single-arm hangers are sold separately as a set of two and should always be used in pairs.

To assemble this setup:

✓ Insert an included ½-in bolt through the hole in a hanger pad with the head of the bolt recessed into the cavity on one side of the pad.
✓ Place the included internal-tooth washer onto the bolt.
✓ Put the bolt through the hole in the single-arm hanger.
✓ Install the grip-handle nut onto the bolt and hand-tighten.
✓ Slide the single-arm hanger assembly into a slot on the fixture side. Note the position of the assembly relative to the front of the unit and possible front accessory usage.
✓ Using a 1/8-inch Allen wrench (included), tighten the set screws (2) in each hanger pad against the fixture body so that the pad no longer slides. A force of about 7 to 10 pounds is all that is needed to secure the pad in place. Test to see that the pad does not slide once secured.
✓ Install a Safety Ring on the bent tab at the back end of the slot where the hanger pad is installed.
✓ Repeat this process for the second single-arm hanger, installing it on the same fixture, or on a different fixture horizontally connected by additional fixtures and/or interlocks.
✓ Do not install more than four (4) FA75 fixtures between a set of single hanger brackets (FA-SH).
✓ **THE FINAL STEP IS TO INSERT THE PROVIDED CARABINEER INTO THE INTERLOCK SLOT TO PREVENT THE HANGER PAD FROM ACCIDENTALLY FALLING OUT.**



Extension Hangers (FA-EXT-x-2)

Extension hangers are sold separately as a set of two and should always be used in pairs. When used properly, these hangers allow vertical ladder configuration of fixtures, with the user having individual tilt control of each fixture.

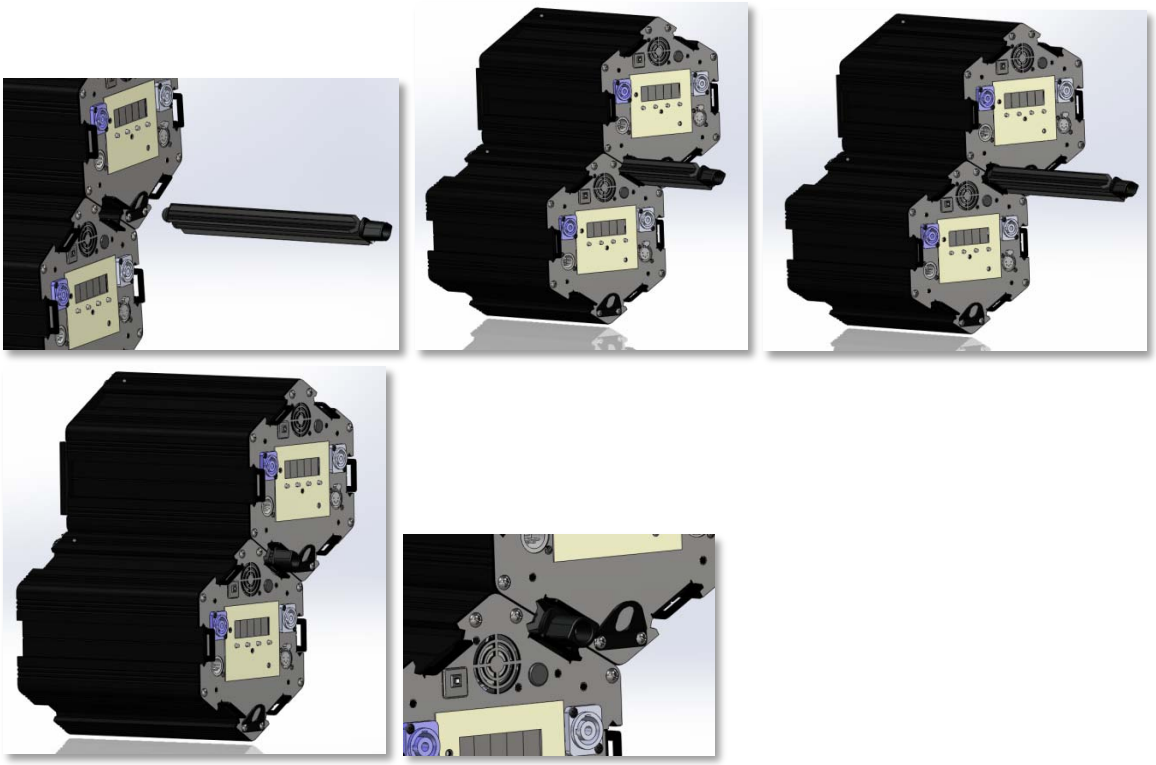
To install extension hangers, remove the turn knob from a hanging unit, insert the hanger extension over the exposed bolt and re-install the turn knob. Repeat this step on the other side of the unit. Repeat as needed to build the size ladder required.

Interlock Device (FA-INT-x-1)

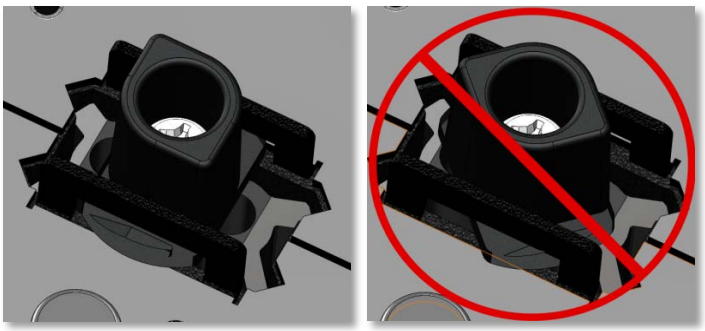
The FlexAray™ Interlock is a key component in providing you design creativity with fixtures. Wherever two or more fixtures are joined, at least one interlock is used to make that connection. Where multiple fixtures are configured together, use an interlock in each set of mating fixture faces.

Each interlock consists of an extruded bar with two rubber bumpers on one end and a spring-loaded locking knob on the other. DO NOT use an interlock device if all of these components are not present and in good working order.

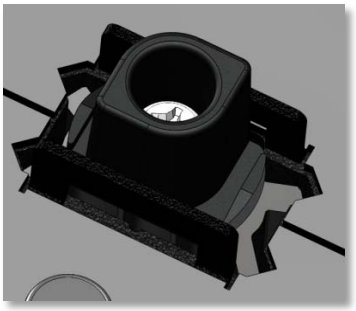
The interlock is installed by sliding it into the enclosed slot created when the flat sides of two fixtures are abutted. Its unique "X" shape should slide in with minimal effort until its rubber bumpers bottom out in the slot. Once in place, push and turn the locking knob clockwise to engage the locking knob tabs under the adjoining tabs on the back of both fixtures. When properly engaged, the tabs should sit in the grooves on each side of the locking knob with the spring securing the knob from turning without being pushed.



Make sure the knob is fully turned into and engaged on the sheet metal. Partially turning the knob may result in an insecure and unsafe condition.



To remove an interlock, simply push and turn the locking knob counter-clockwise until disengaged. Then slide the interlock out of its enclosed slot. Make sure to support the fixtures being separated as one or more fixtures may be free to fall once the interlock is removed.



Optical Accessories (FA-OPTx-1)

The FlexAray™ fixture is capable of holding any 7.5 inch standard accessory. There are two optical beam shaper accessories that are available in 30 degree and 80 degree patterns. It should be noted that a user should check the beam shape to assure that 30 degree and 80 degree beam shapers produce the required shape.

No guarantee is made on the beam sizing when beam shaping materials are being used.

Accessory Installation

Installation of an accessory into the front holders of the FlexAray™ fixture is a matter of placing the accessory and then securing it with the included spring clip.

To place the accessory, slide the accessory over the spring and into the front holders. Use care not to rub, or gently rub the spring clip against the accessory.

With the accessory in the holder and in front of the spring, reach under the spring with one finger and pull it up so that the accessory falls under it. Release the spring so that it now catches and contains the accessory.

Reverse this process to remove the accessory. First put the spring clip behind the accessory, and gently lift the accessory past the spring clip to remove from the unit.

Digital Panel Controls – User Interface

Digital Display

The digital display on the rear of the fixture includes five 7-segment LED positions. From left to right, the first two communicate modes and setting descriptions and the right three show the data being entered.

Buttons

There are 4 pronounced buttons on the digital panel and 1 recessed button accessible through a hole in the panel. The four protruding buttons represent, from left to right, Mode, Set, Up and Down. These are pressed one at a time to modify settings of the fixture. The fifth button (enable) which is recessed behind the panel is for pairing when a LumenRadio™ WiFi option is installed.

LED Indicators

The digital panel includes two indicator LEDs. The indicator directly left of the 7-segment displays relates the status of power to the DMX Driver Controller. The indicator below right of the displays indicates the WiFi status on units with the LumenRadio™ WiFi option installed.

Programming Modes and Settings

FlexAray™ fixtures include proprietary systems for color and frequency management. These features are listed as "modes" in the system settings.

Control Modes

DMX
Stand-alone
Master
Slave
Termination
Generation
Frequency
Reset
Self-Test

Mode Settings

The following modes are available on various models of the FA75 unit. Please refer to the Flow Charts for specific steps and button press sequence(s) to achieve the desired function(s). The units will return to the previous state (operating mode) upon the loss and re-energizing of primary power.

DMX Mode

DMX mode is used when a remote controller is being used. This mode can be used with either the XLR connections or the optional LumenRadio™ wireless receiver card.

The options include 10bit resolution and 16bit resolution; each with the option of an intensity attribute. The intensity attribute can be operated normally or inverted. The inverted mode allows the user to drive the channel(s) where a level of 0 is the attribute at full and level of 255 sets the attribute to complete blackness.

Stand-alone Mode

Stand-alone mode is used in applications where individual, discreet and on-board control of a single unit is desired.

Two primary value tables are provided and needed to understand proper operation.

Stand-alone and Master modes operate in the same manner, except for the single unit versus multiple unit features.

FlexPalette™ is a new concept where the user is able to select and record up to 100 static colors. This FlexPalette™ is then used in any of the six fade and bump modes. In order for the fade and bump patterns to function there must be a minimum number of records set. For fade pattern 1 there must be at least three records set, and for fade patterns 2-4 there must be at least four records set.

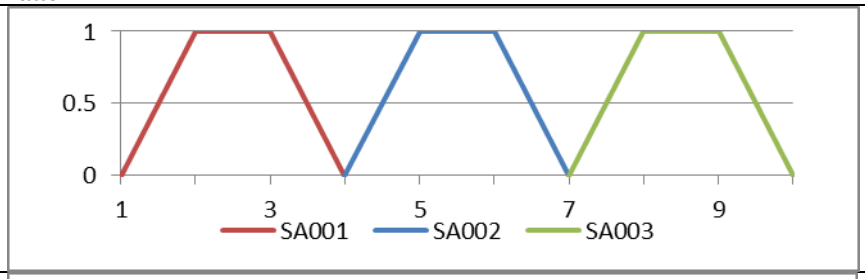
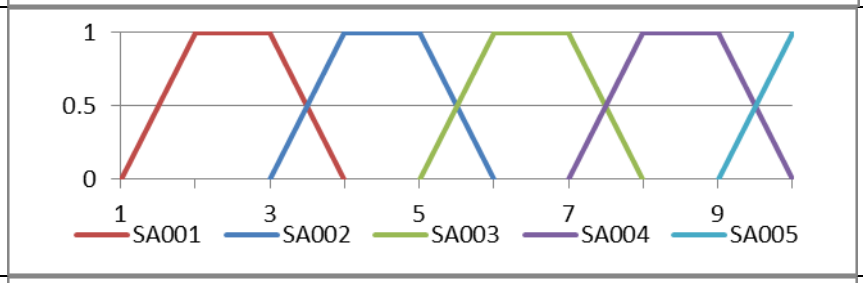
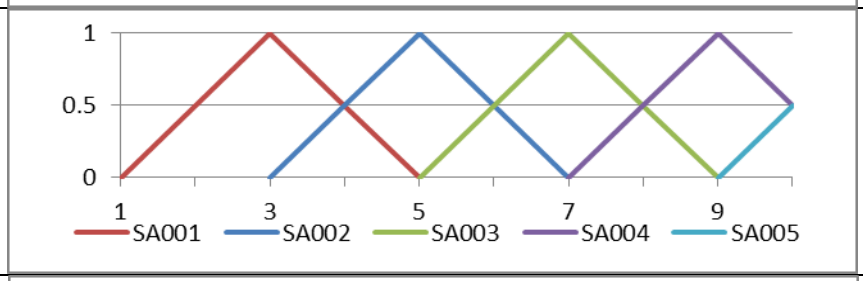
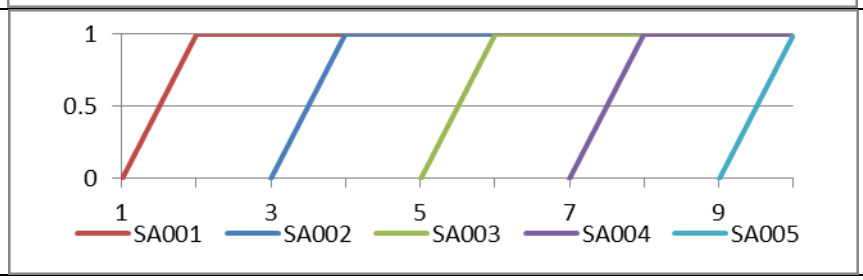
FlexPalette™ is recorded and available in Master mode. In other words, the 100 recorded colors in your FlexPalette™ are able to be recalled and used in Stand-alone or Master modes no matter which mode they are recorded in.

Table 1: Stand-alone Values

Value	Action	
1-100	Static colors	
101-140	Fade rate of recorded static colors recorded	
	101-110	Fade pattern 1 with common rate presets 1-10
	111-120	Fade pattern 2 with common rate presets 1-10
	121-130	Fade pattern 3 with common rate presets 1-10
	131-140	Fade pattern 4 with common rate presets 1-10
141-160	Bump of recorded static colors: On time: 20 equal steps starting with .25 seconds and ending with 300 seconds Off time: 0	
161-180	Bump of recorded static colors: On time: 20 equal steps starting with 1 minute and ending with 2 minutes seconds	

	Off time: 0
181-254	[open]
255	Clear all static color memory in address values 1-100

Table 2: Fade Pattern Values (101-140)

Fade	Pattern
1	
2	
3	
4	
Common Rate Presets 1-10	10 equal steps from 0.6 to 6 seconds in increments of 0.2 seconds; this value is represented by "x" in the fade patterns.

Each graph above represents a portion of a continuous sequence. Horizontal axis labels represent multiples of the "x" timing of fade patterns.

Master Mode

Master mode is used in applications were on-board control of multiple units is desired. The "slave" units must be connected via XLR cables and set in the required mode. The "slave" units will respond to the same commands as set by the "master" unit. It is not required to have the "slave" units connected during set-up of the "master" unit.

Two primary value tables are provided and needed to understand proper operation.

Stand-alone and Master modes operate in the same manner, except for the single unit versus multiple unit feature.

FlexPalette™ is a new concept where the user is able to select and record up to 100 static colors. This FlexPalette™ is then used in any of the six fade and bump modes. In order for the fade and bump patterns to function there must be a

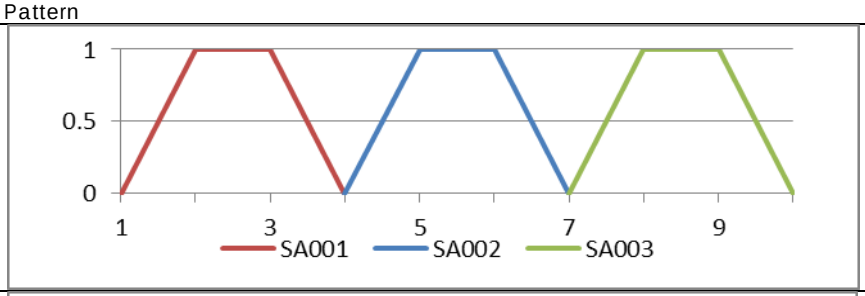
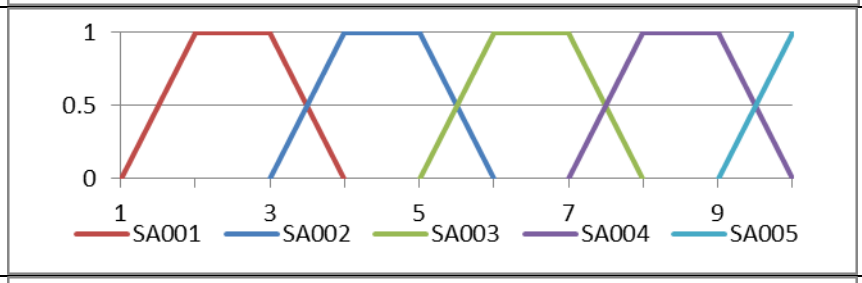
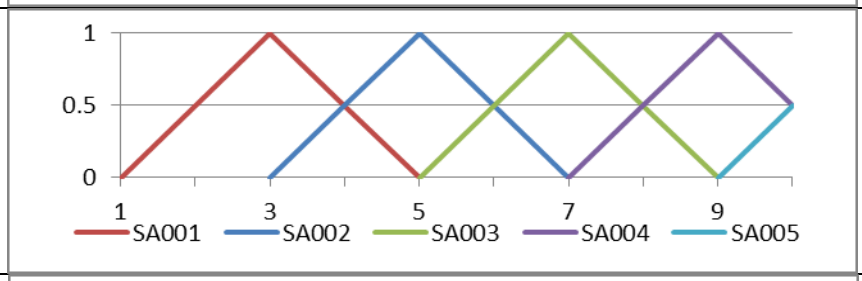
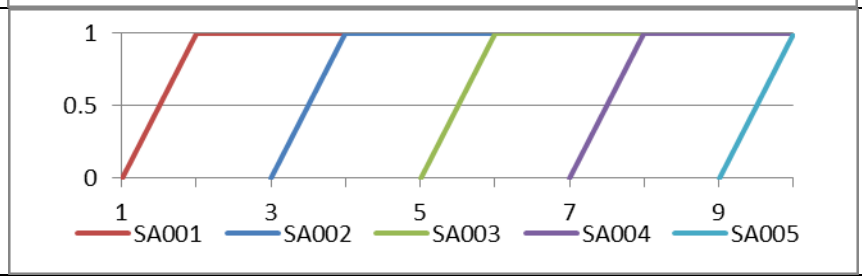
minimum number of records set. For fade pattern 1 there must be at least three records set, and for fade patterns 2-4 there must be at least four records set.

FlexPalette™ is recorded and available in Stand-alone mode. In other words, the 100 recorded colors in your FlexPalette™ are able to be recalled and used in either Master or Stand-alone modes no matter which mode they are recorded in.

Table 1: Master Values

Value	Action	
1-100	Static colors	
101-140	Fade rate of recorded static colors recorded	
	101-110	Fade pattern 1 with common rate presets 1-10
	111-120	Fade pattern 2 with common rate presets 1-10
	121-130	Fade pattern 3 with common rate presets 1-10
	131-140	Fade pattern 4 with common rate presets 1-10
141-160	Bump of recorded static colors: On time: 20 equal steps starting with .25 seconds and ending with 300 seconds Off time: 0	
161-180	Bump of recorded static colors: On time: 20 equal steps starting with 1 minute and ending with 2 minutes seconds Off time: 0	
181-254	[open]	
255	Clear all static color memory in address values 1-100	

Table 2: Fade Pattern Values (101-140)

Fade	Pattern
1	
2	
3	
4	
Common Rate Presets 1-10	10 equal steps from 0.6 to 6 seconds in increments of 0.2 seconds; this value is represented by "x" in the fade patterns.

Each graph above represents a portion of a continuous sequence. Horizontal axis labels represent multiples of the "x" timing of fade patterns.

Slave Mode

Slave mode puts the unit into a receiving signal mode to listen to the "master" unit and respond accordingly. This mode is only engaged when the screen reads "SLAVE".

Terminate Mode

Termination setting is used when the user desires to terminate the last unit in a data string with 120ohms of resistance. This setting does not affect operating mode functions.

Generation Mode

Generation mode is a display of the generation version of firmware loaded on the unit.

Frequency Mode

Frequency mode allows the user to select one of four frequency modes in either the DMX modes, or Master and Slave mode. Frequency mode is set at the unit level and is not transmitted in Master mode to the "slave" units.

The frequencies are pre-set but allow the user to scroll and select a mode from F1 thru F8, based on the operating mode previously selected.

Reset Mode

Reset mode is to clear all memory records and restore the unit to default settings.

The default sets are; all FlexPalette™ records are deleted, the unit termination is set to off, frequency is set to value 1, for DMX modes 1 and 2 and value 5 for DMX modes 3 and 4, intensity attribute is set to standard operation, and the unit is put into self-test mode as its operating mode.

Self-Test Mode

Self Test Mode is used for testing by the user as well as by Technical Support. This mode functions as indicated below.

Table 3: Self-Test Mode

Step	Action
1	Consecutively flash each output channel (1 thru 5) individually for 1 second on, 1/2 second off. Turn off
2	Consecutively dim up each channel (1 thru 5) individually across about 6 seconds. Turn off
3	Start all channels at 100% simultaneously and then level dim down to 0 across 6 seconds
4	Start playback as follows: Bump thru each of the channels at 1 second intervals on, 0.25 seconds off Fade with pattern 1 of Table 2 at 4 second intervals Fade with pattern 2 at 4 second intervals then level fade all to 0 Loop to "a"

The main mode menu now cycles back to the starting position.

Warranty Statement

2-YEAR LIMITED WARRANTY

0energyLIGHTING hereby warrants to the original purchaser ("Purchaser" or "You"), that this 0energyLIGHTING FlexAray™ fixture ("Product" or "Fixture") shall be free of manufacturing defects in material and workmanship on all internal parts and components (the "Warranty") for a period of 2 Years from the date of purchase (the "Warranty Period"). This limited Warranty covers all parts and labor required to repair or replace a defective Fixture within the Warranty Period. This Warranty shall be valid only if the Fixture is purchased within the United States of America, including its possessions and territories. This limited Warranty is extended only to the Purchaser and is not transferrable to subsequent users. It is the Purchaser's responsibility to establish the date and place of purchase by acceptable evidence at the time Warranty service is requested.

All requests for Warranty service must be directed to 0energyLIGHTING's customer service department at 1-888-647-2852 for return authorization prior to shipment of the Fixture to 0energyLIGHTING for Warranty service. If Warranty service is authorized by 0energyLIGHTING, the Purchaser will be issued a Return Merchandise Authorization (RMA) number which must be included within the packing slip of the fixture being returned and on the outside of the box in which it is packed. Please include Purchaser's company's name, contact individual, address and email address on the packing slip. Please return the entire Fixture in its original package. The Fixture must be packaged carefully so as to prevent damage in shipment. The Purchaser bears all risk of shipping damage. No accessories should be shipped with the Fixture as damage or loss may occur. 0energyLIGHTING shall have no liability whatsoever for loss of or damage to any such fixture(s) or accessories, nor for the safe return thereof. All shipping charges must be pre-paid. It is recommended that Purchaser obtain from the carrier, a signed proof of delivery to ensure that the returned Fixture has been received by 0ernegyLIGHTING.

Upon receipt of the Fixture, 0energyLIGHTING will test and evaluate the Fixture. If the Fixture is not found to be defective, then Purchaser may be subject to a labor charge for the evaluation process. If 0energyLIGHTING determines that the Fixture is defective, 0energyLIGHTING will, at it sole option, repair or replace the Fixture, and will pay return shipping charges to a destination within the continental United States designated by Purchaser. Any repairs may be made with new or refurbished parts at 0energyLIGHTING'S sole discretion. In the event of replacement, 0energyLIGHTING will replace the Fixture with a like fixture of equal or better quality and performance.

This Warranty is void if the serial number has been altered or removed, if the Fixture is modified in any manner which 0energyLIGHTING concludes, after inspection, affects the reliability of the Fixture, if the Fixture has been repaired or serviced by anyone other than the 0energyLIGHTING factory unless prior written authorization was issued to purchaser by 0energyLIGHTING, or if the Fixture has not been properly maintained as set forth in the instruction manual. Also, this Warranty excludes damage caused by normal wear and tear, accident, negligence, alteration, abuse or misuse, incorporation of any parts or accessories not supplied by 0energyLIGHTING, fire, flood, earthquake, explosion, acts of vandalism, power surges or improper power supply, corrosive environment use, acts of God, or any other cause beyond the control of 0energyLIGHTING.

This is not a service contract, and this Warranty does not include maintenance, cleaning or periodic check-up. This Warranty also does not cover consumable parts. All products covered by this Warranty were manufactured after January 1, 2012, and bear identifying marks to that effect.

0energyLIGHTING reserves the right to make changes in design and/or improvements upon its products, including the Fixture model, without any obligation to include these changes in any products theretofore manufactured.

NO WARRANTY, EITHER EXPRESSED OR IMPLIED, IS GIVEN OR MADE WITH RESPECT TO ANY ACCESSORY SUPPLIED WITH THE PRODUCT(S) DESCRIBED ABOVE. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ALL EXPRESS WARRANTIES MADE BY 0ENERGYLIGHTING IN CONNECTION WITH THIS FIXTURE ARE LIMITED IN DURATION TO THE WARRANTY PERIOD SET FORTH ABOVE. 0ENERGYLIGHTING EXPRESSLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. UNDER NO CIRCUMSTANCES SHALL 0ENERGYLIGHTING BE LIABLE TO PURCHASER FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, SPECIAL OR PUNITIVE DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR REVENUES, LOSS OF ANY OTHER GOODS OR ASSOCIATED EQUIPMENT OR DAMAGE TO ANY ASSOCIATED EQUIPMENT, COST OF CAPITAL, COST OF SUBSTITUTE PRODUCTS FACILITIES OR SERVICE, AND/OR DOWN TIME COST OR CLAIMS OF PURCHASER'S CUSTOMERS, ARISING OUT OF PURCHASER'S USE OF, OR INABILITY TO USE, THIS FIXTURE. FURTHER, 0ENERGYLIGHTING, LLC LIABILITY FOR ANY BREACH OF THIS WARRANTY SHALL NOT EXCEED THE PRICE OF THE FIXTURE PAID BY PURCHASER.

This Warranty is the sole and exclusive remedy for Purchaser in the event of a defective fixture. This Warranty is applicable solely to 0energyLIGHTING Products and supersedes all prior warranties, whether written or verbal, and heretofore given to Purchaser.

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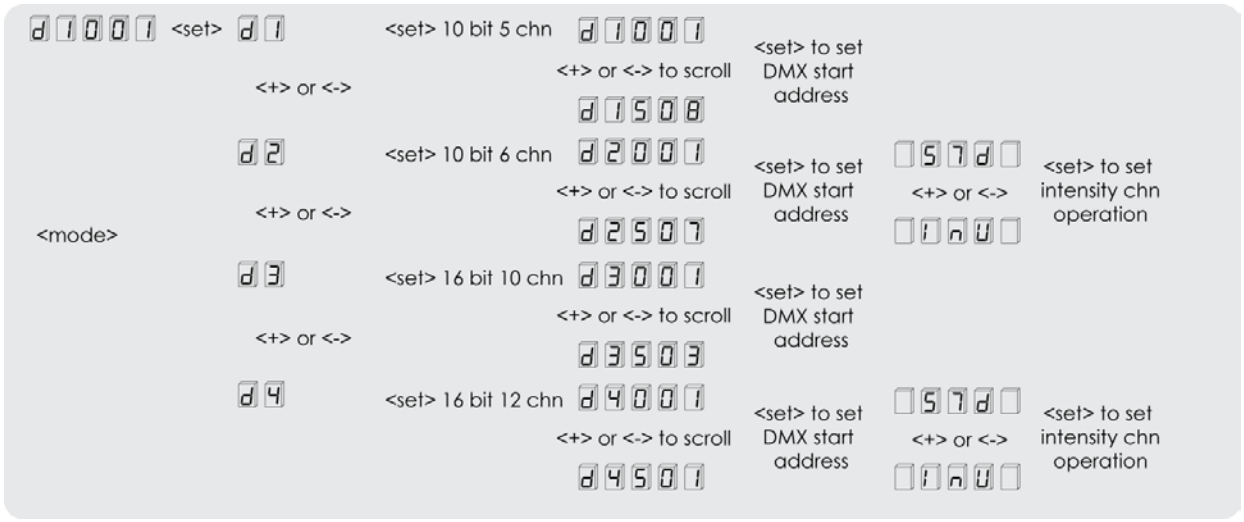
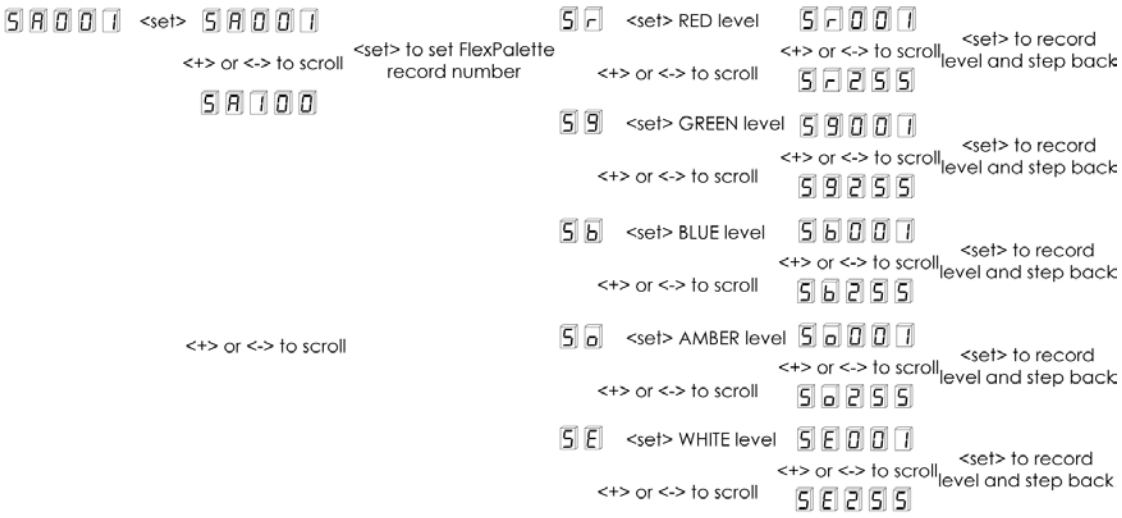
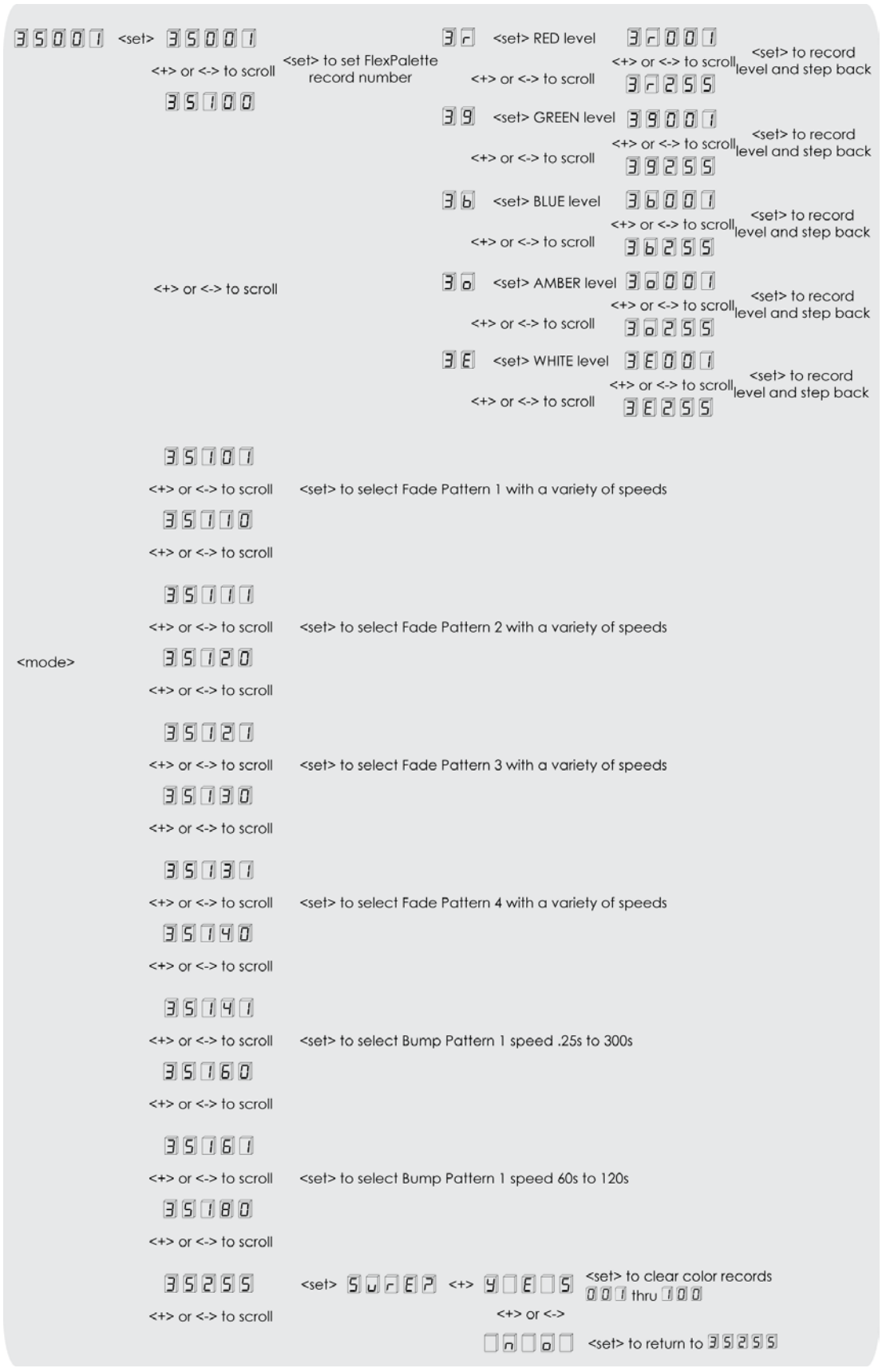
Flow Chart – RGBaW – model FA75-C




SA001 <set> SA001
<+> or <-> to scroll
<set> to set FlexPalette record number
SA100
Sr <set> RED level Sr001
<+> or <-> to scroll
Sr255
<set> to record level and step back
S9 <set> GREEN level S9001
<+> or <-> to scroll
S9255
<set> to record level and step back
Sb <set> BLUE level Sb001
<+> or <-> to scroll
Sb255
<set> to record level and step back
<+> or <-> to scroll
So <set> AMBER level So001
<+> or <-> to scroll
So255
<set> to record level and step back
SE <set> WHITE level SE001
<+> or <-> to scroll
SE255
<set> to record level and step back

<mode>
SA101
<+> or <-> to scroll
<set> to select Fade Pattern 1 with a variety of speeds
SA110
<+> or <-> to scroll
SA111
<+> or <-> to scroll
<set> to select Fade Pattern 2 with a variety of speeds
SA120
<+> or <-> to scroll
SA121
<+> or <-> to scroll
<set> to select Fade Pattern 3 with a variety of speeds
SA130
<+> or <-> to scroll
SA131
<+> or <-> to scroll
<set> to select Fade Pattern 4 with a variety of speeds
SA140
<+> or <-> to scroll
SA141
<+> or <-> to scroll
<set> to select Bump Pattern 1 speed .25s to 300s
SA160
<+> or <-> to scroll
SA161
<+> or <-> to scroll
<set> to select Bump Pattern 1 speed 60s to 120s
SA180
<+> or <-> to scroll
SA255
<+> or <-> to scroll
<set> SurEP <+> yES
<set> to clear color records 001 thru 100
<+> or <->
noSo
<set> to return to SA255


S001 <set> S001
<+> or <-> to scroll
S100
<set> to set FlexPalette record number
r <set> RED level r001
<+> or <-> to scroll
r255
<set> to record level and step back
9 <set> GREEN level 9001
<+> or <-> to scroll
9255
<set> to record level and step back
b <set> BLUE level b001
<+> or <-> to scroll
b255
<set> to record level and step back
o <set> AMBER level o001
<+> or <-> to scroll
o255
<set> to record level and step back
E <set> WHITE level E001
<+> or <-> to scroll
E255
<set> to record level and step back
<+> or <-> to scroll
S101
<+> or <-> to scroll
<set> to select Fade Pattern 1 with a variety of speeds
S110
<+> or <-> to scroll
S111
<+> or <-> to scroll
<set> to select Fade Pattern 2 with a variety of speeds
<mode>
S120
<+> or <-> to scroll
S121
<+> or <-> to scroll
<set> to select Fade Pattern 3 with a variety of speeds
S130
<+> or <-> to scroll
S131
<+> or <-> to scroll
<set> to select Fade Pattern 4 with a variety of speeds
S140
<+> or <-> to scroll
S141
<+> or <-> to scroll
<set> to select Bump Pattern 1 speed .25s to 300s
S160
<+> or <-> to scroll
S161
<+> or <-> to scroll
<set> to select Bump Pattern 1 speed 60s to 120s
S180
<+> or <-> to scroll
S255
<set> SURE? <+> YES
<set> to clear color records 001 thru 100
<+> or <->
no
<set> to return to S255

SL <set> SLAVE <set> to exit
leave in this mode for SLAVE unit operation

<mode>

Tn <set> <+> YES <set> to turn on 120ohm data line termination and exit

<+> or <->

<mode>

no <set> to turn off 120ohm data line termination and exit

gn <set> to display the software version, then <mode> or <set> to exit

<mode>

Fr <set> <+> or <-> Fr F1

<+> or <-> to scroll <set> to set various frequency for flicker free operation and exit

<mode>

Fr F8

rS <set> YES <set> SurE? <+> YES <set> to reset to factory defaults, clear memory and enter self test mode

<+> or <->

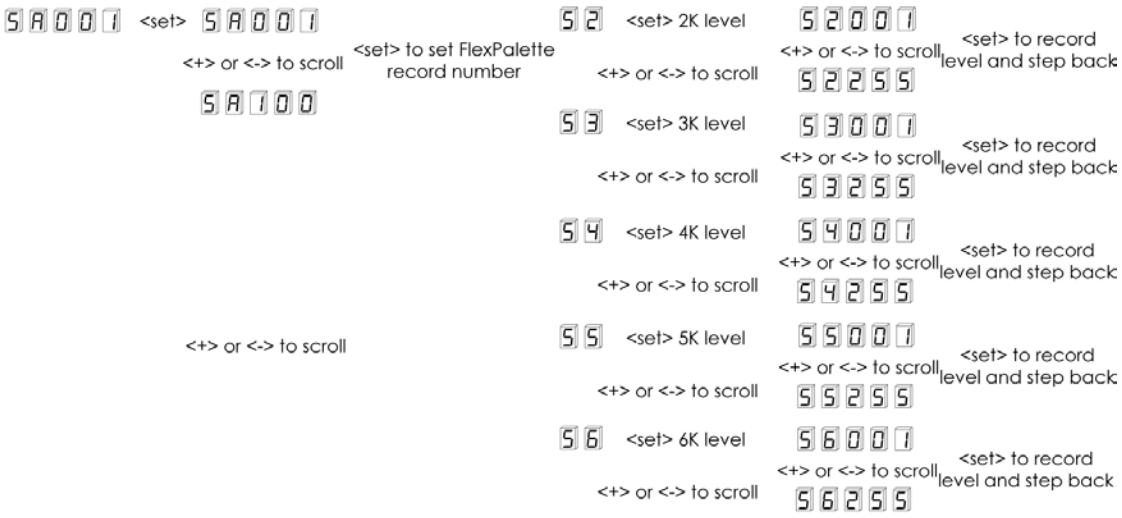
<mode>

no <set> to exit

SF <set> to enter self test mode and the <set> to exit self test mode

<mode>

Flow Chart –Vari White – model FA75-V


SA001 <set> SA001
<+> or <-> to scroll
<set> to set FlexPalette record number
SA100
S2 <set> 2K level
S2001
<+> or <-> to scroll
<set> to record level and step back
<+> or <-> to scroll
S2255
S3 <set> 3K level
S3001
<+> or <-> to scroll
<set> to record level and step back
<+> or <-> to scroll
S3255
S4 <set> 4K level
S4001
<+> or <-> to scroll
<set> to record level and step back
<+> or <-> to scroll
S4255
<+> or <-> to scroll
S5 <set> 5K level
S5001
<+> or <-> to scroll
<set> to record level and step back
<+> or <-> to scroll
S5255
S6 <set> 6K level
S6001
<+> or <-> to scroll
<set> to record level and step back
<+> or <-> to scroll
S6255

<mode>
SA101
<+> or <-> to scroll
<set> to select Fade Pattern 1 with a variety of speeds
SA110
<+> or <-> to scroll
SA111
<+> or <-> to scroll
<set> to select Fade Pattern 2 with a variety of speeds
SA120
<+> or <-> to scroll
SA121
<+> or <-> to scroll
<set> to select Fade Pattern 3 with a variety of speeds
SA130
<+> or <-> to scroll
SA131
<+> or <-> to scroll
<set> to select Fade Pattern 4 with a variety of speeds
SA140
<+> or <-> to scroll
SA141
<+> or <-> to scroll
<set> to select Bump Pattern 1 speed .25s to 300s
SA160
<+> or <-> to scroll
SA161
<+> or <-> to scroll
<set> to select Bump Pattern 1 speed 60s to 120s
SA180
<+> or <-> to scroll
SA255
<+> or <-> to scroll
<set> SurEP <+> YES
<set> to clear color records 001 thru 100
<+> or <->
no
<set> to return to SA255

3500 1 <set> 3500 1
<+> or <-> to scroll
3510 0
<set> to set FlexPalette record number
<+> or <-> to scroll
3510 1
<+> or <-> to scroll
3511 0
<+> or <-> to scroll
3511 1
<+> or <-> to scroll
<mode>
3512 0
<+> or <-> to scroll
3512 1
<+> or <-> to scroll
3513 0
<+> or <-> to scroll
3513 1
<+> or <-> to scroll
3514 0
<+> or <-> to scroll
3514 1
<+> or <-> to scroll
3516 0
<+> or <-> to scroll
3516 1
<+> or <-> to scroll
3518 0
<+> or <-> to scroll
3525 5
<+> or <-> to scroll
<set> SURE? <+> YES
<+> or <-> to scroll
<set> to clear color records 001 thru 100
<set> to return to 3525 5
32 <set> 2K level
<+> or <-> to scroll
3200 1
<+> or <-> to scroll
3225 5
<set> to record level and step back
33 <set> 3K level
<+> or <-> to scroll
3300 1
<+> or <-> to scroll
3325 5
<set> to record level and step back
34 <set> 4K level
<+> or <-> to scroll
3400 1
<+> or <-> to scroll
3425 5
<set> to record level and step back
35 <set> 5K level
<+> or <-> to scroll
3500 1
<+> or <-> to scroll
3525 5
<set> to record level and step back
36 <set> 6K level
<+> or <-> to scroll
3600 1
<+> or <-> to scroll
3625 5
<set> to record level and step back
<set> to select Fade Pattern 1 with a variety of speeds
<set> to select Fade Pattern 2 with a variety of speeds
<set> to select Fade Pattern 3 with a variety of speeds
<set> to select Fade Pattern 4 with a variety of speeds
<set> to select Bump Pattern 1 speed .25s to 300s
<set> to select Bump Pattern 1 speed 60s to 120s

SL <set> SLAVE <set> to exit
leave in this mode for SLAVE unit operation

<mode>

Tn <set> <+> YES <set> to turn on 120ohm data line termination and exit

<+> or <->

<mode> no <set> to turn off 120ohm data line termination and exit

gn <set> to display the software version, then <mode> or <set> to exit

<mode>

Fr <set> <+> or <-> Fr F1

<+> or <-> to scroll <set> to set various frequency for flicker free operation and exit

<mode> Fr F8

rS <set> YES <set> SurE? <+> YES <set> to reset to factory defaults, clear memory and enter self test mode

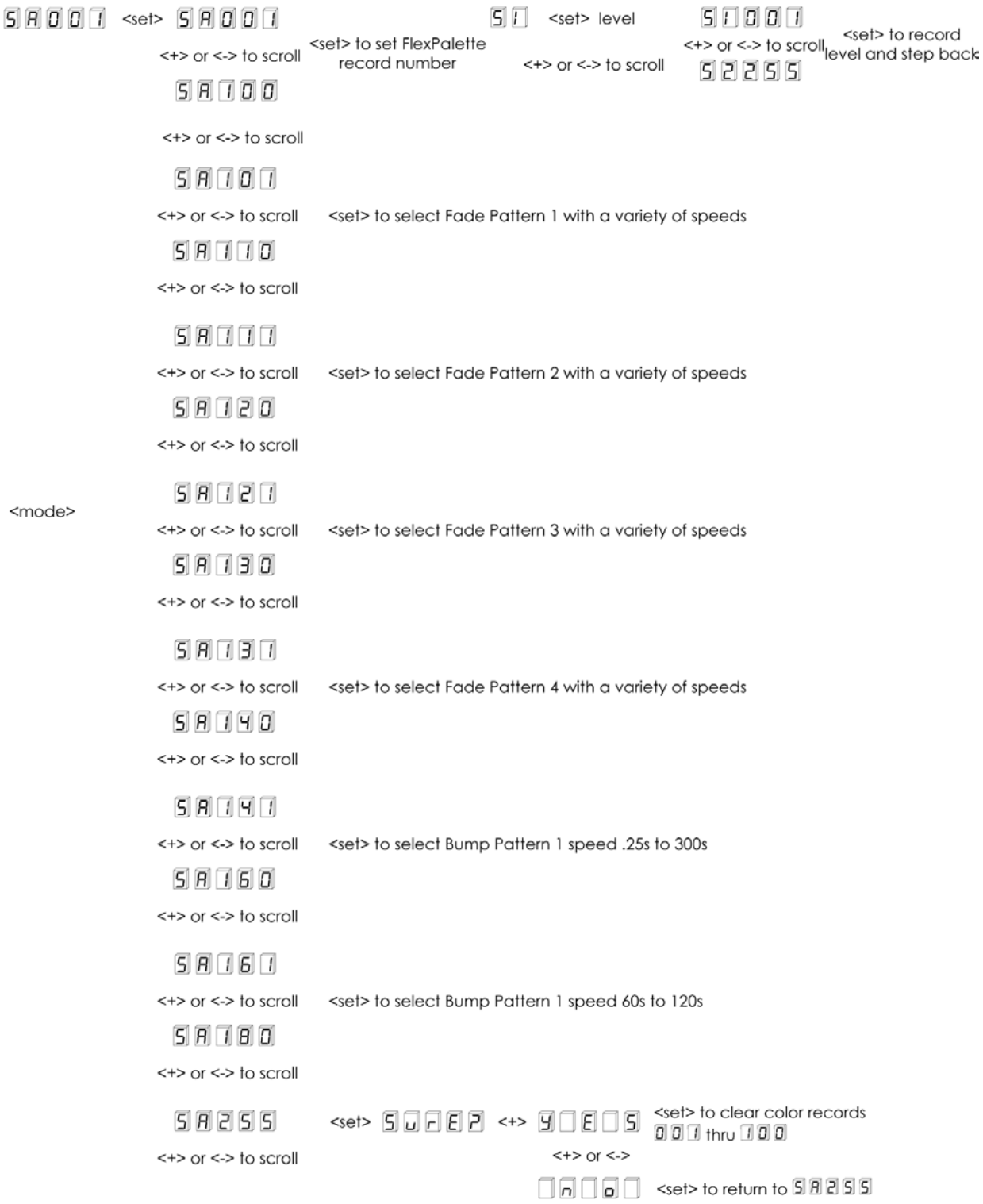
<+> or <->

<mode> no <set> to exit

SF <set> to enter self test mode and the <set> to exit self test mode

<mode>

Flow Chart – S32, S44 and or S56 – models FA75-S32, FA75-S44, FA75-S56


SA001 <set> SA001
<+> or <-> to scroll
<set> to set FlexPalette record number
S1 <set> level
<+> or <-> to scroll
S1001
<+> or <-> to scroll
S2255
<set> to record level and step back
SA100
<+> or <-> to scroll
SA101
<+> or <-> to scroll
<set> to select Fade Pattern 1 with a variety of speeds
SA110
<+> or <-> to scroll
SA111
<+> or <-> to scroll
<set> to select Fade Pattern 2 with a variety of speeds
SA120
<+> or <-> to scroll
SA121
<mode>
<+> or <-> to scroll
<set> to select Fade Pattern 3 with a variety of speeds
SA130
<+> or <-> to scroll
SA131
<+> or <-> to scroll
<set> to select Fade Pattern 4 with a variety of speeds
SA140
<+> or <-> to scroll
SA141
<+> or <-> to scroll
<set> to select Bump Pattern 1 speed .25s to 300s
SA160
<+> or <-> to scroll
SA161
<+> or <-> to scroll
<set> to select Bump Pattern 1 speed 60s to 120s
SA180
<+> or <-> to scroll
SA255
<+> or <-> to scroll
<set> SURE? <+> YES
<set> to clear color records 001 thru 100
<+> or <->
no
<set> to return to SA255

3501 <set> 3501
<+> or <-> to scroll
<set> to set FlexPalette record number
3100
3502 <set> 2K level
3200 1
<+> or <-> to scroll
<set> to record level and step back
3255
3503 <set> 3K level
3300 1
<+> or <-> to scroll
<set> to record level and step back
3355
3504 <set> 4K level
3400 1
<+> or <-> to scroll
<set> to record level and step back
3455
3505 <set> 5K level
3500 1
<+> or <-> to scroll
<set> to record level and step back
3555
3506 <set> 6K level
3600 1
<+> or <-> to scroll
<set> to record level and step back
3655
<+> or <-> to scroll
3510 1
<+> or <-> to scroll
<set> to select Fade Pattern 1 with a variety of speeds
3511 0
<+> or <-> to scroll
3511 1
<+> or <-> to scroll
<set> to select Fade Pattern 2 with a variety of speeds
<mode>
3512 0
<+> or <-> to scroll
3512 1
<+> or <-> to scroll
<set> to select Fade Pattern 3 with a variety of speeds
3513 0
<+> or <-> to scroll
3513 1
<+> or <-> to scroll
<set> to select Fade Pattern 4 with a variety of speeds
3514 0
<+> or <-> to scroll
3514 1
<+> or <-> to scroll
<set> to select Bump Pattern 1 speed .25s to 300s
3516 0
<+> or <-> to scroll
3516 1
<+> or <-> to scroll
<set> to select Bump Pattern 1 speed 60s to 120s
3518 0
<+> or <-> to scroll
3525 5
<+> or <-> to scroll
<set> SURE? <+> YES
<set> to clear color records 001 thru 100
<+> or <->
no
<set> to return to 3525

SL <set> SLAVE <set> to exit
leave in this mode for SLAVE unit operation

<mode>

TRM <set> <+> YES <set> to turn on 120ohm data line termination and exit

<+> or <->

<mode> NO <set> to turn off 120ohm data line termination and exit

SW <set> to display the software version, then <mode> or <set> to exit

<mode>

FR <set> <+> or <-> FR FI

<+> or <-> to scroll <set> to set various frequency for flicker free operation and exit

<mode> FR F8

RST <set> YES <set> SURE? <+> YES <set> to reset to factory defaults, clear memory and enter self test mode

<+> or <->

<mode> NO <set> to exit

SF <set> to enter self test mode and the <set> to exit self test mode

<mode>